

What is claimed is:

1. A method of adjusting color of images displayed in ambient light, comprising:

5 sensing a signal from a plurality of spectral regions of an ambient light source to define a sensed signature of the ambient light source;

comparing the sensed signature to predetermined signatures of candidate light sources to identify a candidate light source that corresponds to the ambient light source; and

10 creating images modified by a predefined color adjustment for the candidate light source identified.

2. The method of claim 1, which further comprises providing a predetermined signature and a predefined color adjustment for each of the candidate light sources.

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3. The method of claim 2, wherein providing a predetermined signature includes providing data relating to intensity of a candidate light source in each of the spectral regions for each of the plurality of candidate light sources.

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4. The method of claim 2, wherein providing a predefined color adjustment includes defining one or more lookup tables for transformation of input color values to output color values, and wherein creating images includes modifying input values from digital image files using the one or more lookup tables of the selected color adjustment.

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5. The method of claim 4, wherein defining one or more lookup tables includes defining a three-dimensional lookup table configured to transform a plurality of input color values to a single output color value.

6. The method of claim 2, wherein providing a predefined color adjustment includes defining an optical modification of one or more light components used to create the images.

5 7. The method of claim 6, wherein defining an optical modification includes defining a filter through which one or more of the light components will be passed during creating images.

10 8. The method of claim 1, wherein sensing a signal from each of a plurality of spectral regions includes 1) selecting two or more spectral regions that in combination produce distinguishable signatures for each of the candidate light sources, and 2) sensing an intensity from each of the two or more spectral regions.

15 9. The method of claim 1, wherein sensing a signal for each of a plurality of spectral regions includes sensing the signal for each of three or more spectral regions.

20 10. The method of claim 1, wherein comparing includes selecting a predetermined signature that most closely corresponds to the signal sensed for each of the spectral regions.

25 11. The method of claim 1, wherein creating images includes projecting light onto a surface.

30 12. The method of claim 1, wherein creating images includes 1) selecting image representations having data corresponding to the images, 2) modifying the data according to the color adjustment, and 3) sending the data to a light engine after modifying.

13. The method of claim 12, wherein selecting image representation includes selecting digital image files.

14. A system for adjusting color of images displayed in ambient light,
5 comprising:

a light engine configured to create images from a set of image representations;

a light sensor for sensing a signal from each of a plurality of spectral regions of an ambient light source to define a sensed signature of the ambient
10 light source; and

a controller in communication with the light sensor and the light engine, the controller having access to a predetermined signature and a predefined color adjustment for each of a plurality of candidate light sources, the controller being configured to compare the sensed signature to the predetermined signatures to
15 identify a candidate light source that corresponds to the ambient light source, thereby defining a selected color adjustment based on the candidate light source identified, the controller also being configured to modify each of the images created by the light engine with the color adjustment for the candidate light source identified.

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15. The system of claim 14, wherein the light sensor includes a plurality of filters that selectively permit light from each of the spectral regions to reach the light sensor.

25 16. The system of claim 14, wherein the light sensor includes a plurality of sensor elements, each sensor element of the plurality being configured to sense a different one of the spectral regions.

17. The system of claim 14, wherein the controller is configured to send instructions corresponding to the image representations to the light engine, and wherein the controller is configured to apply the selected color adjustment before sending.

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18. The system of claim 17, wherein the image representations include image elements each having a plurality of input color values, and wherein the selected color adjustment defines a lookup table configured to relate the plurality of input color values to a single output color value for at least a subset of the image elements.

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19. The system of claim 14, wherein the controller is configured to send instructions for optical modification of light components by the light engine, the optical modification including selecting a filter through which to pass one or more of the light components.

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20. The system of claim 14, wherein the light engine is configured to project light onto a surface.

21. A program storage device readable by a processor, tangibly embodying a program of instructions executable by the processor to perform methods steps for adjusting color of images displayed in ambient light, the method steps comprising:

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providing a predetermined spectral signature and a predefined color adjustment for each of a plurality of candidate light sources;

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sensing a signal from a plurality of spectral regions of an ambient light source to define a sensed signature of the ambient light source;

comparing the sensed signature to each predetermined signature to identify a candidate light source that corresponds to the ambient light source, thereby selecting a color adjustment based on the candidate light source identified; and

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creating images modified by the selected color adjustment.

22. The program storage device of claim 21, wherein providing a predetermined signature includes providing data relating to intensity of a candidate light source in each of the spectral regions for each of the plurality of candidate light sources.

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23. The program storage device of claim 21, wherein providing a predefined color adjustment includes defining one or more lookup tables for transformation of input color values to output color values, and wherein creating images includes modifying input values from digital image files using the one or
10 more lookup tables of the selected color adjustment.

24. The program storage device of claim 23, wherein defining a lookup table includes defining a three-dimensional lookup table configured to transform a plurality of input color values to a single output color value.

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25. The program storage device of claim 21, wherein providing a predefined color adjustment includes defining an optical modification of one or more light components used to create the images.

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26. The program storage device of claim 25, wherein defining an optical modification includes defining a filter through which one or more of the light components will be passed during creating images.

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27. The program storage device of claim 21, wherein sensing a signal from each of a plurality of spectral regions includes 1) selecting two or more spectral regions that in combination produce distinguishable signatures for each of the candidate light sources, and 2) sensing an intensity from each of the two or more spectral regions.

28. The program storage device of claim 21, wherein sensing a signal for each of a plurality of spectral regions includes sensing the signal for each of three or more spectral regions.

5 29. The program storage device of claim 21, wherein comparing includes selecting a predetermined signature that most closely corresponds to the signal sensed for each of the spectral regions.

10 30. A system for adjusting color of images displayed in ambient light, comprising:

means for sensing a signal from a plurality of spectral regions of an ambient light source to define a sensed signature of the ambient light source;

15 means for comparing the sensed signature to predetermined signatures of candidate light sources to identify a candidate light source that corresponds to the ambient light source; and

means for creating images modified by a predefined color adjustment for the candidate light source identified.